

Date: Thu, 16 Dec 93 04:30:23 PST
From: Ham-Digital Mailing List and Newsgroup <ham-digital@ucsd.edu>
Errors-To: Ham-Digital-Errors@UCSD.Edu
Reply-To: Ham-Digital@UCSD.Edu
Precedence: Bulk
Subject: Ham-Digital Digest V93 #148
To: Ham-Digital

Ham-Digital Digest Thu, 16 Dec 93 Volume 93 : Issue 148

Today's Topics:

 Anyone modified an IC-22A for 9600 ???
 Best low-cost WEFAX SW/HW
 COMPLETE Documented NOS Wanted
 Help! 9600 baud info needed!
 Host Software Choices
 Minisport Laptop Hacker - Vol 18
 Need advice on using tube-final rigs for RTTY/AFSK
 Packet radio beginner question

Send Replies or notes for publication to: <Ham-Digital@UCSD.Edu>
Send subscription requests to: <Ham-Digital-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Digital Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-digital".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Tue, 14 Dec 1993 09:02:55 +0000
From: ucsnews!sol.ctr.columbia.edu!xlink.net!howland.reston.ans.net!pipex!demon!
g3nrw.demon.co.uk!ian@network.ucsd.edu
Subject: Anyone modified an IC-22A for 9600 ???
To: ham-digital@ucsd.edu

Subject says it all I have an ageing IC22-A which might just do for 9600.
Can you help?

73

Ian, G3NRW

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+-----+-----+-----+

Ian Wade	e-mail: ian @ g3nrw.demon.co.uk
7 Daubeney Close, Harlington,	AMPRnet: g3nrw.ampr.org [44.131.5.147]
Dunstable, Beds, LU5 6NF, UK.	AX.25: G3NRW @ GB7BIL.#27.GBR.EU

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Date: 14 Dec 1993 14:20:00 GMT

From: ucsnews!sol.ctr.columbia.edu!howland.reston.ans.net!usenet.ins.cwru.edu!
nigel.msen.com!ilium!gdls.com!usenet@network.ucsd.edu
Subject: Best low-cost WEFAx SW/HW
To: ham-digital@ucsd.edu

I'd like to explore Weather FAX at a reasonable cost. I noticed several commercial packages around \$100 or so (AEA, SSC, etc) and one shareware with a homebrew interface.

Does anyone have any recommendations as to the best way to go. I would like to keep the cost less than \$150, as that's all my dog has saved up for my Christmas present :-)

Thanks

Bill

Date: Mon, 13 Dec 1993 19:30:14 GMT
From: ncrgw2.ncr.com!ncrhubb2!law7!cn292.DaytonOH.NCR.COM!jra@uunet.uu.net
Subject: COMPLETE Documented NOS Wanted
To: ham-digital@ucsd.edu

In article <9312012304.tn22729@aol.com> <mattharvey@aol.com> writes:

>I would like to know how I could attain a copy of the latest version of KA9Q
>unmodified NOS. I would appreciate it if I could find a package with complete
>documentation that includes the file BM.EXE. Please send responses to
>MattHarvey@aol.com OR KD4AZH@KB4GBS.#TPA.FL.US.NOAM.

About 18 months ago I wrote a document called IntroNOS (not to be confused with Ian's NOSIntro!!!) that's about a 35 page intro to configuring and using NOS as an end-user system. It's based on the N1BEE version of PAOGRI NOS, and unfortunately I haven't had time to update it against the newer versions, but the info is still basically valid.

It covers configuration and basic operation (ftp, telnet, setting up mail, etc.) with the assumption you know a bit about packet, but nothing about NOS or TCP/IP.

It's available from ucsd.edu as hamradio/packet/tcpip/doc/intronos.zip. It's also in the packet radio library of Compu\$erve under a slightly different name due to their silly filename restrictions -- something like INTNOS.ZIP, I think.

You might find it helpful.

73,
John Ackermann AG9V
jra@lawdept.daytonOH.ncr.com

Date: 14 Dec 1993 10:56:30 -0600
From: sdd.hp.com!elroy.jpl.nasa.gov!usc!howland.reston.ans.net!torn!nott!bnrgate!
corpgate!crchh327.bnrt.ca!debaker@network.ucsd.edu
Subject: Help! 9600 baud info needed!
To: ham-digital@ucsd.edu

I am trying to get a radio modified for 9600 operation, but so far I haven't been able to get very much information. I am using a Kenwood TM-742A, and would like to run it at 9600. If anyone (preferably someone with a modified 742) knows how to do this, please email or post here, or packet mail at AB5PI@N5LDD.#DFW.TX.USA.NA

Thanks,

David E. Baker	Opinions expressed are
Callsign: AB5PI	mine, and they do not
Internet: debaker@bnr.ca	necessarily reflect
IP Addr: 47.122.65.7	the opinions of BNR or
Unix ID: crchh7b0	or Northern Telecom.
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Date: 15 Dec 93 23:51:48 GMT
From: world!dts@uunet.uu.net
Subject: Host Software Choices
To: ham-digital@ucsd.edu

In article <36069@dog.ee.lbl.gov> biocca@csg.lbl.gov (Alan K Biocca) writes:
>I'm considering upgrading my PC Host software for the PK232. What programs
>are popular, and what are their strengths and weaknesses? I've been
>using simple terminal emulation programs up to now. I may give a shot
>at the January RTTY roundup, so one question is how do these programs
>work in a contest environment?

>
>Thanks,
>
>Alan
>WB6ZQZ
>AKBiocca@lbl.gov
>
>

PKGold is my choice. It is by a company called Interflex out in California.
You will find an advertisement for them in the back of nearly every ham mag.

For RTTY Contesting, though, I recommend WF1B's program RTTY. It is
specifically designed for RTTY contesting.

Dan N1JEB

--

Daniel Senie Internet: dts@world.std.com
Daniel Senie Consulting n1jeb@world.std.com
508-365-5352 Compuserve: 74176,1347

Date: 11 Dec 93 21:27:28 GMT
From: olivea!isc-br!tau-ceti!comtch!opus-ovh!bmork@uunet.uu.net
Subject: Minisport Laptop Hacker - Vol 18
To: ham-digital@ucsd.edu

MiniSport Laptop Hacker - Vol 18, Dec 1993
To discourage pecuniary interests, Copyright (c) 1993 Brian Mork

>>> ADMIN

Remember, you can get copies on disk of any software or text file I refer to (including the MLHacker series) by sending me a disk and SASE. I'll put a variety of other MLHacker related goodies on there, too. MLHacker is available on the KA6ETB Internet HAM-Server. Send a message to ham-server@grafex.cupertino.ca.us with the single line of text: HELP to get access information. Check the \hamradio\newsletters directory. If you're comfortable with late-night long distance phone calls, you may download MLHacker related stuff directly from me at 509-244-9260. Use the FILES command, and L)og into the \public\computer directory. Standard XMODEM and YMODEM protocols are available. ARO related CD-ROM, Internet e-mail, and Usenet newsgroups are also available from this free service.

>>> POWER SUPPLY

Nothing, I repeat nothing, beats a schematic diagram when fixing electrical equipment. No fancy test equipment can compare. Thank you big time, Brian, for 1) recognizing my reverse engineered attempt (see Vol 17), and 2) sending me the real schematic! Two hours later... I have a dead n-channel enhancement-mode MOSFET ("K612" in case anybody can offer a cross reference). There's a 7V p-p, 500 KHz square wave arriving at the gate. The intent is that the drain pulls current through a switching power supply transformer primary. Wasn't happenning. Drain stays at the +V supply voltage. Comparing with another K612 that handles the electroluminescent screen voltages confirms the first one is not working.

Several parts houses couldn't identify the K612 part, so I made a trip to Radio Shack and picked up a 276-2072 IFR510 n-Channel MOSFET. It's about twice as big as the K612, and its specifications are an over-kill, but it's all I had available. It cost just over \$2.00. Instead of mounting it as a surface mount on the bottom side of the circuit board, I layed it sideways between some capacitors on the top of the circuit board and ran hookup wire to the bottom side of the board for connections. Everything works fine! A representation of the power supply pinout given in Vol 5 is in order. This time, I know functionality, too.

With the bottom of the computer removed, the motherboard still in place, pin 1 is toward the right and front of the computer, numbered like this:

15 13 11 9 7 5 3 1
16 14 12 10 8 6 4 2

1 5 V backup supply #1, 10-300 mA
2 BACKUP-ON request from computer, TTL levels
3 Ground (backup power supplies)
4 5 V backup supply #2, 10-45 mA
5 VEE-ON request from computer, TTL levels
6 -22 V (Vee), 10mA
7 +10 V, 10 mA
8 -10 V, 10 mA
9 EL-ON (LCD screen) request from computer, TTL
10 Li Battery +V input to power supply (~6.3 V)
11 Ground (Li battery circuits)
12 POWER-ON request from computer, TTL levels
13 Ground (hi current return from pins 15/16)
14 Duplicates Pin 13
15 5 V (Vcc), 0.25-0.6 A
16 Duplicates Pin 15

A note of caution is in order. The computer will automatically shut down if certain voltages don't come up to specs within a few seconds

(this appears as a 2 second blink of the power and numlock LEDs and the screen). Requests from the computer can be deceiving unless you know what you're looking at. For instance, I repeatedly measured Pin 9 at zero volts during my debugging. I thought the computer was erroneously not asking for the screen voltages. In fact, right when I pushed the power button, it came high for a few seconds, and then shut back off. It !was! working ok. Pin 12, on the other hand, went high to 5+ volts and then dropped back to 4.7 volts as the main 5 V supplies were shut down. This pin kept the request (4.7 volts is TTL high) active, and only dropped back to zero when I pressed the power switch once again, telling the computer to shut "off". Realize if there are good NiCads, good Li batteries, or the external charger is plugged in, this computer never really shuts totally off.

There are three main sections to the power supply. The first handles all the 5 Volt supplies. Both batteries are brought in to this section and the normal computer supply and the backup voltages are provided from this circuitry. If pins 1, 4, 15, or 16 are bad at the power supply header, this section is malfunctioning.

The second section is where my trouble occurred. An integrated circuit regulator provides oscillation signals for the switching converter and appropriate voltage feedback control. A three-tapped transformer followed by diode rectification provides +10v, -10v and -22v. If pins 6, 7, or 8 are not at correct voltages, suspect problems in this area.

The last section is associated with the electroluminescent screen voltages, and has its own 6-pin header. To see it, open up your Minisport using the directions in MLH Vol 5 and find the 6-pin jumper going from the power supply board into the display pivot joint. Only 4 wires are used. One handles ground. Two carry current to/from the brightness control, and one is the high voltage drive for the display. Specifically:

- 6 50-150 VAC p-p, nominally 138 VAC
- 5 n/c
- 4 GND
- 3 n/c
- 2 return from 20 Kohm brightness control
- 1 diode rectified 10 VDC going to brightness control

If pins 1 or 6 !of the screen connector! are at incorrect voltages, suspect problems here. Incidentally, Pin 9 of the motherboard power supply connector (see MLH Vol 5 and Vol 17) is a TTL level request from the computer to turn the electroluminescent display on. It goes into Pin 14 of the MB3778. The MB3778 oscillator output is buffered through three parallel CMOS gates and toggles the gate of a K612 MOSFET, which in turn pulls current through a transformer. Subsequently, a high voltage step

up transformer (looks like a telephone line isolation transformer) generates the high VAC for the screen.

Packing tape applied on the front and sides of the keyboard worked well to bundle the keyboard to the motherboard as I worked on the assembly. Without this, the keyboard connector ribbons get severely strained as the board is flipped this way then that way.

I am growing to dislike auto-routed circuit boards. The computer logic generates through-the-board vias that terribly confuse a person trying to trace the circuitry. In a lot of cases, casual inspection shows single side alternative routes were available.

>>> BAD ROM DISK

I received a message over Internet from a Minisport user that indicated his ROM disk (C:) has gone dead. He's getting checksum errors on boot-up. Do you have the equipment and willingness to pull your ROM, make a copy and send it on to Ron? I ask this not just for one user, but everyone else this will eventually happen to. The source for original ROMs has dried up, and if we're going to keep Minisports working, it would be good to know who could do this for others.

>>> MEMORY SWAPS

The first MB of memory on a ZL-2 is eight discrete chips soldered on the motherboard. The second MB is a SIPP package. I know from experience the 2nd MB can be unsoldered and swapped into a ZL-1. Thomas asks if the lower and upper MB are interchangeable. Unfortunately, no. However, I would be interested in soldering a standard PC SIPP into my ZL-1 and see if the graft takes. Do you have an unused 1 MB SIPP you'd be willing to let me use?

Please provide feedback:

- * BBS 1-509-244-9260
- * AX.25 KA9SNF@wb7nnf.#spokn.wa.usa
- * Internet bmork@opus-ovh.spk.wa.us
- * 6006-B Eaker, Fairchild, WA 99011

73, Brian

Brian Mork Internet bmork@opus-ovh.spk.wa.us (BBS 509-244-9260)
. Amateur Radio (AX.25) ka9snf@wb7nnf.#spokn.wa.usa
... . . . USMail 6006-B Eaker, Fairchild, WA 99011

Date: Wed, 8 Dec 1993 20:42:44 GMT

From: news.acns.nwu.edu!math.ohio-state.edu!magnus.acs.ohio-state.edu!csn!
col.hp.com!srgenprp!alanb@network.ucsd.edu
Subject: Need advice on using tube-final rigs for RTTY/AFSK
To: ham-digital@ucsd.edu

Patric M Stickler (stickler@klaava.Helsinki.FI) wrote:

: I'll be shopping for a used rig soon ...
: but have heard that many older rigs have problems both from
: the 100% duty cycle and sluggish operation. ...

: How can one
: estimate the max. drive the finals can take at 100% duty cycle?

If the rig has an AM mode, use the AM carrier power rating.

Even better, mount a 3 or 5-inch muffin fan on the side of the cabinet blowing directly on the final amplifier tubes. With that, you should be able to run full CW power on digital modes. The main limitation then will be the power transformer -- As long as you keep the transmit time below 50% (at least 50% listening time), you should be OK.

AL N1AL

Date: Mon, 13 Dec 1993 20:16:37 GMT

From: library.ucla.edu!europa.eng.gtefsd.com!howland.reston.ans.net!math.ohio-state.edu!sdd.hp.com!col.hp.com!srgenprp!alanb@network.ucsd.edu
Subject: Packet radio beginner question
To: ham-digital@ucsd.edu

Allen Koberg (koberg@spot.Colorado.EDU) wrote:

: My question is, what frequencies are normally used for packet radio at
: 1200 baud (that is what the Baycom modem is at right)?

: My radio is 2 meter, but I understand some transmissions are in the
: FM range. Is 2 meter for 9600 and FM for 1200/300? Lemme know, so
: I'll know whether to build this or not.

OK, I think I understand your confusion. Although "AM" and "FM" are commonly used to refer to different broadcast band frequency ranges, in fact AM and FM are modulation types, not frequency bands. You could put an FM transmitter in the AM broadcast band and vice versa (although it would be illegal, of course.)

FM is one of the commonly used modes on the amateur 2 meter band, and is the one normally used for packet. Most operation is at 1200 baud, although faster speeds are becoming available. Around here, the most popular frequencies are 144.91, 144.93, 144.95, 144.97, 144.99 and 145.01, 145.03, 145.05, 145.07, 145.09.

Packet is also used on the amateur shortwave bands, using SSB

(single sideband) transmitters/receivers and 300 baud.

AL N1AL

End of Ham-Digital Digest V93 #148
